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ABSTRACT

This self-instructional module is designed to inform health care providers about the concept of universal precautions, which has been recommended by the U.S. Public Health Department as a way of minimizing the risk of occupationally acquired human immunodeficiency virus (HIV), infections, and the potential development of acquired immunodeficiency syndrome (AIDS). The module covers the modes of HIV transmission and describes in detail the infection control strategies that should be used when implementing universal precautions. Various practice activities are provided throughout the module for reinforcement. A postassessment is included to help the learner evaluate personal achievement of the listed learning objectives. A discussion of the importance of implementing universal precautions to prevent the spread of other infectious agents is also included. The module has been field-tested by a selected group of learners. (MN))

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UNIVERSAL PRECAUTIONS: AN INSTRUCTIONAL MODULE FOR NURSES AND OTHER ALLIED HEALTH PERSONNEL

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1988

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By
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James L. Moseley, Ed.D., M.S.L.S

This self-instructional module is designed to teach the concept of universal precautions to health care providers. The United States Public Health Department recommends the use of universal precautions to minimize the risk of occupationally acquired HIV, Human Immunodeficiency Virus, infections and the potential development of AIDS disease. The teaching/learning experience in the module includes specific content on the modes of HIV transmission and detailed descriptions of the infection control strategies used when implementing universal precautions. Various practice activities are provided throughout the module to reinforce learning. A post-assessment at the end of the module assists the learner to evaluate personal achievement of the listed teaching/learning objectives. A discussion of the importance of implementing universal precautions to prevent the spread of other infectious agents is included. The module has been field-tested by a selected group of learners.

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INTRODUCTION

This module, "Universal Precautions," addresses the following issue: AIDS, Acquired Immune Deficiency Syndrome, has been a major health problem in the United States since the first case was reported June 1981. The U.S. Public Health Service (PHS) has responded to the AIDS epidemic in a variety of ways including the promotion of methods for preventing the spread of this fatal disease. Universal precautions have been designated by the PHS as infection control strategies capable of minimizing exposure to HIV, the AIDS disease virus, and various other infectious agents. The purpose of the module is to provide a means by which health care providers can become cognizant of AIDS and of universal precautions as effective procedures to use for the prevention of occupationally acquired infections.

DIRECTIONS

1. This module is designed to be self-instructional with all the necessary information presented in this booklet. A reference list at the end of the module provides additional content resources.

2. As you read this text, you are asked to respond to practice activities. These activities provide reinforcement of your learning.

3. Correct responses to the practice activities are found on the page(s) following each activity.

4. This module will take approximately one to one and a half hours to complete.

5. A post-assessment of your learning is provided at the end of the module. Please complete this activity and then compare your responses with those on page 30.

6. On page 31 a Glossary of Terms is provided for your convenience.

PLEASE CONTINUE

OBJECTIVES

OVERALL OBJECTIVE:
In response to the current incidence of AIDS, Acquired Immune Deficiency Syndrome, the health care provider will develop a plan to correctly implement universal precautions when caring for all clients. In order to achieve this objective, you must be able to attain the following specific objectives:

1. In writing, correctly explain the fundamental assumption about the presence of infectious agents which is basic to the implementation of universal precautions.

2. When asked, list reasons why universal precautions are recommended for infection control in health care settings. To be judged mastered, at least three rationale must be presented.

3. Using simple terminology and uncomplicated concepts, explain the effect of the AIDS virus, HIV, upon body systems. To be judged mastered, must relate three levels of effect.

4. When asked, discuss the disease AIDS as related to the implementation of universal precautions. To be judged mastered, must relate both the modes and non-modes of transmission of HIV.

5. Without the use of reference material, correctly identify key components of universal precautions.

6. After studying the list of universal precautions, correctly state at least four recommendations for the safe use and disposal of needles and other sharp instruments.

7. After studying the list of universal precautions, correctly state three recommendations for the safe disposal of bacteriologic and other laboratory wastes.

PLEASE CONTINUE

PREREQUISITES

Successful achievement of the objectives of this module is dependent upon your background knowledge about the infectious process. To help you determine if you have the necessary prerequisite knowledge, please complete the following. If you do not have this prerequisite knowledge, please refer to a standard fundamentals of nursing textbook and/or a medical dictionary before beginning to work on the module.

1. A contagious disease is _____

   _____

2. A pathogen is _____

   _____

3. A virus is _____

   _____

4. A disease carrier is _____

   _____

5. Name three modes of transmission of microorganisons. _____

   _____

6. Briefly explain how antibodies are formed. _____

   _____

   _____

7. Briefly list general aseptic techniques that can be used to prevent infection and the spread of disease.

   _____

   _____

WHEN READY, PLEASE TURN THE PAGE AND CONTINUE

PRE-ASSESSMENT

You are asked at this point in the module to participate in a pre-assessment activity. This exercise is important to help determine how much knowledge you already posses regarding the concept of universal precautions and various aspects of the disease AIDS. Do not be concerned if are unable to answer all questions. The module is designed to teach the content from which these questions were devised. If you score 100% on this exercise before proceeding into the module, you have mastered the content and do not need to participate in this teaching/learning experience. Answers to the pre-assessment questions are on page 7. Rationale for the answers are obtainable as you study the content.

1. What is the fundamental assumption about the presence of infectious agents which is basic to the implementation of universal precautions.

_____

_____

_____

_____

_____

DIRECTIONS: For questions # 2 - # 12, select the ONE best answer and circle the appropriate letter.

2. HIV, the virus that causes AIDS, is:

   A. Hemoplastic Immunity Vector

   B. Human Immunodeficiency Virus

   C. Histogenetic Innoxious Viroid

   D. Histoid Immunobiologic Venter

3. The fact that a negative HIV antibody test does not guarantee the absence of the AIDS virus is one of the reasons for implementing universal precautions.

   A. True
   B. False

CONTINUED ON THE NEXT PAGE

4. Modes of transmission of AIDS include:

   1. Sexual relations with an HIV infected person

   2. Puncture wounds by an HIV contaminated needle

   3. Receiving HIV contaminated blood transfusions

   4. Contact with food contaminated when prepared by persons infected with HIV

   A. 1,2,3 C. All but 1
   B. All but 2 D. All of these

5. ARC, AIDS-Related Complex, is

   A. Present when opportunistic diseases have affected the HIV infected person.

   B. Present when there are no apparent signs and symptoms in an HIV infected person.

   C. Present when purplish blotches and bumps on the skin are evident in HIV infected persons.

   D. Present when symptoms such as loss of appetite, weight loss, night sweats, diarrhea, swollen lymph nodes are evident in an HIV infected person.

Determine your answers to questions # 6 - # 13 as related to the implementation of universal precautions.

6. Patient specimen containers should be labeled as infectious especially if the client is suspect for AIDS.

   A. True
   B. False

7. Hand washing is required between contact with patients only when pathogens are know to be present.

   A. True
   B. False

8. Masks and goggles or protective face shields should be worn when splattering of blood or body fluids is likely.

   A. True
   B. False

CONTINUED ON THE NEXT PAGE

9. After use, it is important to bend, break or remove contaminated needles from disposable sponges by hand to prevent the spread of pathogens.

   A. True
   B. False

10. When gloves are used and discarded after each single patient use, they serve as a substitute for hand washing.

   A. True
   B. False

11. The placement of collection containers in areas accessible to the public while awaiting trash collection and removal is not a concern as long as the lid on the container is in place.

   A. True
   B. False

12. All blood specimens and liquid wastes should be discharged into the sanitary sewer system.

   A. True
   B. False

13. All used bacteriologic culture material should be antoclaved or incinerated prior to disposal.

   A. True
   B. False

PLEASE TURN TO THE NEXT PAGE TO CHECK YOUR RESPONSES

PRE-ASSESSMENT RESPONSES

It is possible for any number and types of pathogens to be present in all persons at any given time. Therefore, using a group of infection control strategies to protect all health care workers from infectious agents will minimize the risk of occupational-acquired infectious diseases.

2. - - B

3. - - A

4. - - A

5. - - D

6. - - B

7. - - B

8. - - A

9. - - B

10. - - B

11. - - B

12. - - A

13. - - A

WHEN YOU HAVE COMPLETED THE PRE-ASSESSMENT ACTIVITY AND ARE READY TO CONTINUE, PLEASE TURN THE PAGE.

"UNIVERSAL PRECAUTIONS" - - -

- - - WHAT ARE THEY ? - WHY USE THEM?

"Universal precautions" is a fairly new concept in the area of infection control and prevention of the spread of contagious diseases. The basic assumption is that it is possible for any number and type of infectious agents to be present in all persons at any given time. Health care agencies using universal precautions adhere to a policy that emphasizes the need for health care workers to consider that all patients and clients they care for are potential carriers of one or more infectious pathogens.

It is not possible to identify all clients who may have undiagnosed infections or individuals who are potential carries of disease because of personal practice of high risk activities. Therefore, the use of a set of overall infection control strategies, by health care providers will minimize the risk of occupationally acquired infections. Universal precautions have been recommended by the United States Public Health Service, through the Division of Disease Control, as primary infection control strategies for preventing the transmission of infectious agents in health care setting.

The practice of universal precautions does not depend upon special procedures to be used when exposure is possible to one specific source of contamination. Instead it is assumed that the set of infection control strategies contained in universal precautions can be applied regardless of which or how may specific pathogens may be present. The use of universal precautions has, therefore, eliminated the need for some of the traditional categories of isolation and precautions.

Traditional isolation/precautions include: Enteric, Drainage/Secretion, Wound/Skin, Strict, Immumo-myelosuppression, Respiratory, and Resistant Organism. While some of these methods of infection control may be retained by various agencies because of their requirement for a private room, the implementation of using universal precautions with all patients automatically eliminates the need for the following three categories: Blood and Body Fluid, Enteric, and Drainage/Secretion Precautions.

CONTINUED ON THE NEXT PAGE

The concept of universal precautions has been developed during the 1980s primarily in response to the dreaded nation-wide AIDS epidemic. Even though only 12 health care workers have been reported as infected by the AIDS virus due to occupational exposure (Woodward & Stuart, 1988), the staff of health care agencies share with others the fears and problems associated with this fatal disease.

Statistics published by the U.S. Department of Health and Human Services report 59,491 AIDS cases, 33,280 known AIDS related deaths and an estimated 1 million to 1.5 million Americans now infected with HIV (Windom, 1988). Because of the need to prevent infection by the AIDS virus, implementation of universal precautions in all health care settings is promoted across the United States.

When universal precautions are applied uniformly with all clients and patients,it is possible to minimize the risk of transmitting HIV as well as many other infectious agents among health care workers. This is significantly important when considering the fact that other infectious agents have been more contagious and more deadly in the health care setting than HIV. For example, occupational acquired Hepatitis B infections have caused approximately 300 deaths among health care workers in the U.S. every year.

The above statistics are suggestive of the overall significance of the implementation of universal precautions as an infection control strategy. Only 12 cases of occupationally acquired HIV infection have been reported as of the writing of this module, but there have been traditionally nearly 300 deaths annually from occupationally acquired Hepatitis B infections. The implementation of universal precautions may continue to be effective not only in preventing the spread of AIDS but also in preventing exposure of health care providers to many other pathogens.

PLEASE CONTINUE

AIDS - - -

- - - WHAT IS IT? - - WHAT CAN BE DONE ABOUT IT?

AIDS, Acquired Immune Deficiency Syndrome, is a blood borne and sexually transmitted disease in which HIV, the AIDS virus, invades the body's immune system and destroys it to the point that opportunistic diseases may develop and ultimately bring death. HIV, Human Immunodeficiency Virus, is transmitted chiefly during sexual contact or through the sharing of intravenous drugs or contaminated needles and syringes. The AIDS virus causes dys-function of the immune system so that the infected person is susceptible to life-threatening illnesses such as pneumonia, meningitis, cancer and other opportunistic diseases. Presently there is neither a cure nor a vaccine to prevent AIDS disease.

When the body becomes infected with HIV, the virus attacks certain white blood cells called T-Lymphocytes. In response, the body produces antibodies which can be detected in a blood sample usually within two weeks to three months. Unfortunately for purposes of disease prevention, the infected person can pass the virus to other persons even before antibodies are developed and become detectable in the antibody test. Thus a negative antibody test does not mean absence of HIV the infection.

Persons can respond physically in three different ways following HIV invasion. Some become carriers and remain symptom free and well even though they are capable of infecting others. Some persons develop the condition known as ARC, AIDS Related Complex, which causes less severe signs and symptoms than AIDS disease. While in other persons the immune system is destroyed sufficiently by HIV to remove the body's protective defense system, other infectious agents such as bacteria, protozoa, fungi and virus are no longer controllable. When these infections invade the body, related diseases, known as opportunistic, can develop and may eventually cause death. Examples of these opportunistic diseases include: Pheumocystis carinii pneumonia and tuberculosis, and certain types of cancer such as Kaposi's sarcoma. It is at this point that the diagnosis of AIDS disease is established.

CONTINUE ON THE NEXT PAGE

It is important that those persons who are infected with the AIDS virus, but remain physically well, do not take the situation lightly. To prevent transmitting the HIV to others, they should not engage in unprotected sexual relations, be involved in intravenous drugs and needle sharing, nor donate blood, organs, tissues or sperm because of the presence of the AID virus.

Persons who develop signs and symptoms of ARC should be examined by a physician. These signs and symptoms include loss of appetite, weight loss, fever, night sweats, skin rashes, diarrhea, tiredness, lack of resistance to infection, and swollen lymph nodes. ARC patients' symptoms are usually less severe than those with the AIDS disease. ARC symptoms can usually be treated symptomatically. However, to prevent transmission of HIV to those in their family and community unknowingly, ARC patients should seek professional medical advice.

The signs of symptoms of persons diagnosed as having AIDS disease are characteristic of those associated with ARC as well as those related to the opportunistic diseases. Shortness of breath and/or difficult breathing and coughing may be the symptoms of Pheumocystis carinii pneumonia. Purplish blotches and bumps on the skin maybe a sign of Kaposi's sarcoma. Persons with AIDS should seek the treatment of physicians to minimize their symptoms and to receive information about various opportunities available to them for assistance in fighting their disease.

PLEASE TURN TO PRACTICE ACTIVITY # 1 ON THE NEXT PAGE

PRACTICE ACTIVITY # 1

A. The basic assumption of universal precautions is that: (circle the number of your selected response)

1. Health care workers must be informed when the client they are caring for is an AIDS carrier.

2. There are specific infectious agents that require a specific set of infection control strategies.

3. It is possible for any number and type of infectious agents to be present in all persons at any given time.

B. List the three traditional isolation/precaution categories that can be eliminated from the health care setting when universal precautions are implemented.

1. _____

2. _____

3. _____

C. List the three possible levels of effect on the body as a result of infection by HIV.

1. _____

2. _____

3. _____

PLEASE TURN TO THE NEXT PAGE TO CHECK YOUR RESPONSES.

PRACTICE ACTIVITY # 1 RESPONSES

A. The basic assumption of universal precautions is that: (circle the number of your selected response)

1. Health care workers must be informed when the client they are caring for is an AIDS carrier.

2. There are specific infectious agents that require a specific set of infection control strategies.

3. It is possible for any number and type of infectious agents to be present in all persons at any given time.

THE CORRECT RESPONSE IS # 3.

B. List the three traditional isolation/precaution categories that can be eliminated from the health care setting when universal precautions are implemented.

1. Blood and Body Fluid

2. Enteric

3. Drainage/Secretion

C. List the three possible levels of effect on the body as a result of infection by HIV.

1. Presence of HIV, negative or positive antibody test, no signs/symptoms.

2. Presence of HIV, negative or positive antibody test, with sign & symptom.

3. Presence of HIV, negative or positive antibody test, with signs & symptoms and opportunistic disease.

When you have successfully completed this practice activity you should feel pleased because or your accomplishment. When you are ready to continue turn to the next page.

If you did not correctly accomplish this practice activity, re-read pages 8-11. Then do ACTIVITY # 1 again. If you are not satisfied with your progress at that point, you may want to refer to the resources listed on page 32 for independent study.

AIDS - - -

- - - MODES AND NON-MODES OF TRANSMISSION

The known modes of transmission of HIV, the AIDS disease virus, are as follows:

- Infected body fluids primarily blood, semen, and vaginal secretions.
- Sharing of contaminated needles and intravenous drugs.
- Sexual contact with an infected person.
- Infected women to their infants pre-natally and/or during childbirth and possibly during breast feeding.
- Transfusion of contaminated blood and blood products.

The chance of contaminated blood transfusion is greatly reduced today because units of donated blood are screened by the HIV antibody test prior to administration.

HIV has been found in tears, sweat and saliva, but culture/medium capabilities of these body fluids is very low. It is probably because of this fact that no incidence of transmission through these sources has been reported.

Although knowledge of the non-modes of AIDS transmissions is not necessary for the implementation of universal precautions, it is important that health care workers are familiar with this information. Nurses and nursing students should especially be aware of the ways by which HIV is NOT transmitted. In their role as primary care giver, nurses frequently are required to provide information to their clients about health care issues. It is important, therefore, that they be knowledgeable of the non-modes of HIV transmission.

CONTINUE ON THE NEXT PAGE

The AIDS virus **CAN NOT** be transmitted through the following:

- Casual social contact such as shaking hands or children playing with children, infected with HIV, in the school or day care setting.
- Eating food prepared by persons infected with HIV.
- Using the same telephone, drinking fountains, eating utensils or toilet used by HIV infected persons.
- Coughing or other air-borne sources, door knobs, or dish towels.
- Serving a meal, or feeding an HIV infected person who is weak and needs help.
- Changing bed linens and hospital gowns.
- Contact with other body discharges such as urine, stool, or vomitus, unless they contain infected blood cells.
- Dogs, cats, domestic animals, insects such as mosquitoes, swimming pools, or shopping in a large urban mall.

Authorities have made the statement that AIDS can not be acquired from saliva, sweat, tears, urine, stool, or kissing.

PLEASE TURN TO PRACTICE ACTIVITY # 2 ON THE NEXT PAGE
TO CHECK YOUR READING

PRACTICE ACTIVITY # 2 RESPONSES

A. List 4 modes of transmission of the AIDS virus.

1. _____

2. _____

3. _____

4. _____

B. List 6 non-modes of transmission of the AIDS virus.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

PLEASE TURN TO THE NEXT PAGE TO CHECK YOUR RESPONSES.

PRACTICE ACTIVITY # 2 RESPONSES

A. List 4 modes of transmission of the AIDS virus.

1. Blood and Body Fluids
2. Contaminated needles/intravenous drugs
3. Sexual contact
4. Pre-natally, childbirth, breast-feeding

Other. Blood/Blood Products transfusion

B. List 6 non-modes of transmission of the AIDS virus.

1. Casual contact
2. Food preparation
3. Telephone, fountains, toilet
4. Coughing/air borne
5. Feeding an infected person
6. Bed lines, gowns

Others. Urine stool vomitus

Domestic animals, insects

When you have correctly completed this practice activity you are to be congratulated for a job well done. Turn to the next page and continue your study.

If you need extra practice, re-read pages 14-15. Then repeat PRACTICE ACTIVITY # 2 and if you need further assistance refer to the resources available in the reference list on page 32 for independent study.

PLEASE CONTINUE

UNIVERSAL PRECAUTIONS - - -

- - KEY COMPONENTS

The primary goal of the infection control strategies contained in universal precautions is to prevent the exposure of skin and mucous membranes of nose, mouth and eyes to blood and body fluids. Health care providers who do not use protection strategies to avoid contact with patient blood and body fluids are at risk of infection by the virus that causes AIDS as well as a variety of other disease causing pathogens. The key components of universal precautions strategy to protect health care workers include the following:

- Wear gloves when touching blood and body fluids, mucus membranes or non-intact skill of all clients, when handling items or surfaces soiled with blood and body fluids, and when performing venipuncture or other vascular access procedures. Gloves should be changed after contact with blood or body fluids.

- Wear masks and protective eye wear or face shields during procedures that are likely to generate droplets of blood or body fluids to prevent exposure of mucus membranes of mouth, nose and eyes.

- Wear gowns when soiling with blood or body fluids is likely.

- Wash hands between all patient contacts and immediately if soiled with blood or body fluids, and immediately after removing gloves.

Hand washing may be the ONLY precaution necessary for many patient contacts.

- Have available mouth pieces, resuscitation bags or other ventilation devices in areas when resuscitation procedures are likely to be used.

Salvia has not been implicated in HIV transmission, but availability of appropriate equipment will help minimize the need for direct mouth to mouth resuscitation.

CONTINUE ON THE NEXT PAGE

- Health care workers who have skin lesions or abrasions should refrain from direct patient care and contact with patient equipment until the condition is resolved.

- Use standard methods for handling soiled linens.

Dirty linen from all sources is considered a host for infectious agents of any kind.

- Use standard methods of disinfection for spills of blood and body fluid by removal and wiping the area with a solution of 1 part house hold bleach to 10 parts water.

Ordinary methods of disinfection for urine, stool and vomitus from non-infected people are adequate for persons infected with HIV.

- Pregnant health care workers should be especially familiar and adhere to universal precautions.

Although, these persons are not known to be at greater risk, if a pregnant person becomes infected, the infant is at danger for peri-natal transmission and/or potential infection from breast milk.

Many health care agencies have developed programs to encourage the use of universal precautions by their employees through a variety of inservice activities. The use of gloves has been an area of misunderstanding among nurses and other health care providers. The following excerpt from a large urban hospital newsletter addresses this issue.

> All nurses should routinely use gloves for touching blood and body fluids, mucous membranes, or non-intact skin of ALL patients, and for handling items or surfaces soiled with blood or body fluids. Gloves should be worn for routine venipuncture; however, nursing judgment in this situation should be your guide. The use of non-sterile, loosely fitting gloves may in some cases actually increase the potential for needle stick injuries.

CONTINUE ON THE NEXT PAGE

Gloves should be changed after each patient. Hands should be washed immediately after gloves are removed. **GLOVES ARE NOT TO BE CONSIDERED A SUBSTITUTE FOR GOOD HANDWASHING TECHNIQUE.** Likewise, you cannot wash a pair of gloves as effectively as you can wash your hands.

Do not wear gloves for charting, talking on the phone, passing medications, or any other routine non-patient care activity. Gloves can transmit infectious organisms in the same way as hands can, and, therefore, must be used appropriately.

- - - - - - - - - - -

At this time, there have been no studies done demonstrating that one type glove is any better at protecting from exposure from blood or body fluids that another glove. The difference that you may notice in the gloves may be due to fit; that is, latex gloves usually fit better than vinyl gloves (Woodard & Stuart, 1988).

Even though it is important to practice these uses of gloves as well as other universal precautions consistently with all patients, it should be noted that this does <u>NOT</u> mean that there is a need to wear gowns, gloves, and masks during every patient contact. Universal precautions should be employed only when appropriate.

PLEASE CONTINUE

UNIVERSAL PRECAUTIONS - - -

- - - NEEDLES, SHARPS, AND CONTAINERS

A second area of concern for health care workers is the proper use of needles, other sharp instruments and containers. These items may serve as vehicles for transmission of numerous infectious agents including HIV. As such they have a high potential for injury to persons who work in health care settings as well as those who work in non-health related areas. Universal precautions include guidelines for the use and disposal of needles and sharps as follows:

- After use, do not recap, purposefully bend, break, remove needles from disposable syringes, or otherwise manipulate by hand.
- Place into puncture-resistant collection containers as close as possible to the area in which they are used.
- During use and at the time of discard, the collection container should be sealed to prevent access by non-medical personnel.
- Collection containers should not be placed in an area accessible to the public while awaiting trash collection and removal.
- Needles and sharps should not be processed in trash compactors prior to trash collection and removal.

As a general rule, these infectious control procedures are essentially the same strategies that have been used traditionally for the handling of needles and sharps, soiled linens and patient waste such as food and soiled dressings. These items have been appropriately contained in bags, boxes, or sharps containers. Disposable non-sterile gloves have been used to prevent contact with linen soiled with moist body substances and other wastes during the process of bagging. The major difference with universal precautions is that special handling of some items and special labelling or use of red linen bags is not required. All patient items are assumed to be infectious and should be handled as such. Special handling is not needed.

PLEASE CONTINUE

UNIVERSAL PRECAUTIONS - - -

- - - LABORATORY WASTES

An additional area of concern for health care providers is the proper disposal of bacteriologic and other laboratory wastes. These items are contaminated by various infections bacteria and viruses which many include HIV. They should be considered as vehicles for the potential transmission of infectious diseases such as AIDS. For aesthetic and public health reasons there are recommendations for the safe disposal of laboratory wastes in keeping with universal precautions as follows:

- All blood specimens and liquid wastes should be discharged into the sanitary sewer system.
- All used bacteriologic culture material should be autoclave or incinerated prior to disposal. Specimen containers should be autoclaved or incinerated prior to disposal.
- Waste material should not be place in an area accessible to the public while awaiting trash collection and removal.

As with the disposal of needles, sharps and containers, the above methods of handling laboratory wastes are essentially the same as those prior to the outbreak of the AIDS epidemic. With universal precautions the major change is related to the labelling of these materials. Patient specimen containers and other special materials do **NOT** need an additional infectious label applied. All patient specimens, as with any patient blood or body fluid specimen, should be considered potentially infectious and should be treated as such by all the staff.

PLEASE TURN TO PRACTICE ACTIVITY # 3 ON THE NEXT PAGE.

PRACTICE ACTIVITY # 3

A. List six key components of the universal precautions strategy.

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

6. _____

_____

B. List four universal precaution strategies for the use and disposal of needles and other sharps.

1. _____

_____

2. _____

_____

3. _____

_____

CONTINUED ON THE NEXT PAGE

PRACTICE ACTIVITY (Cont.)

4. _____

_____

C. List three universal precaution strategies for the safe disposal of bacteriologic and other laboratory wastes.

1. _____

_____

2. _____

_____

3. _____

_____

PLEASE TURN TO THE NEXT PAGE TO CHECK YOUR RESPONSES.

PRACTICE ACTIVITY # 3 RESPONSES

A. List six key components of the universal precautions strategy.

1. Wear clean gloves whenever in contact with blood/body fluid, mucus membranes.

2. Wear masks and eye protection when at risk for exposure to droplets of blood/body fluid.

3. Wear gowns when at risk for soiling with blood/body fluid.

4. Handwashing between patients, when soiled with blood/body fluid, and after removing gloves.

5. Use mouth pieces and other resuscitation devices when needed.

6. Use traditional, standard soiled linen care methods.

Others Care for spills of blood/body fluids urine, stool, vomitus with standard disinfectants.

Pregnant women use universal precautions, as others, to prevent exposure to infectious agents.

B. List four universal precaution strategies for the use and disposal of needles and sharps.

1. Do not manipulate by hand, for any purpose, used needles, needle caps, syringes.

2. Place into puncture-resistant containers located as close as possible to use.

3. Seal containers before removal to prevent access by non-related persons.

4. Place containers away from public access.

Others Do not use trash compactors as disposable containers.

CONTINUED ON THE NEXT PAGE.

PRACTICE ACTIVITY # 3 RESPONSES (Cont.)

C. List three universal precaution strategies for the safe disposal of bacteriologic and other laboratory wastes.

1. Discharge blood and liquid wastes into the sanitary sewer system.

2. Autoclave or incinerate culture material and specimen containers.

3. Do not place waste material in an area accessible to the public.

If you have correctly completed this practice activity you are ready to do the post-assessment on page 27. Your efforts in studying the content of this module should serve you well in successfully completing the post-assessment.

If you were not as successful as you could have been on this practice activity, re-read page 18-22. Then repeat this practice activity. If you need further assistance, refer to the resources available in the reference list on page 32 for independent study.

TURN TO THE NEXT PAGE AND BEGIN THE POST-ASSESSMENT.

POST-ASSESSMENT

DIRECTIONS: Read each statement carefully, select the best answer and respond according to the directions provided.

1. In the space provided, write a brief definition of AIDS and state how this disease differs from ARC.

_____

_____

_____

_____

_____

2. If the following statement is True, circle A; if it is False, circle B:

It is possible to be infected with HIV and be capable of spreading this virus to others even though there is no physical evidence of HIV infection.

A. True
B. False

3. In the space provided list three reasons why universal precautions are recommended for infection control in health care settings.

A. _____

_____

B. _____

_____

C. _____

_____

DIRECTIONS: For questions # 4 - # 8, one or more of the choices is correct. Decide which completion is correct and fill the blank with one of the following numbers next to YOUR CHOICE:

1 - if A, B and C are correct
2 - if only A and C are correct
3 - if only B and D are correct
4 - if only D is correct
5 - if all answers are correct

4. Modes of transmission of HIV include:

   A. Donating blood at the same Red Cross Center used by persons infected with Hiv.

   B. Shared use of intravenous drugs and needles with HIV infected persons.

   C. Dogs, cats or other domestic animals at risk for infection via mosquito bits.

   D. Oral or anal sex with an HIV infected person.

   YOUR CHOICE _____

5. Common opportunistic diseases associated with AIDS include:

   A. Kakyozoic Sarcoma

   B. Kaposi's Sarcoma

   C. Pneumocystis eosinophilia pneumonia

   D. Pneumocystis carinii pneumonia

   YOUR CHOICE _____

6. Which of the following is true regarding the use of gloves/gowns/masks/goggles according to the concept of universal precautions:

   A. Latex gloves provide better protection than vinyl when there is exposure to infected blood or body fluids

   B. Goggles or face shields are required but not masks when splattering of blood or body fluids is likely.

   C. Health care staff who have correctly applied a sterile dressing to their own cut or skin abrasion have removed their otherwise increased risk of becoming infected.

PLEASE CONTINUE

D. Handwashing may be the only precaution necessary for designated patient contacts.

YOUR CHOICE _____

7. Which of the following is true regarding the use and disposal of needles and other sharp instruments according to the concept of universal precautions:

A. After use, contaminated needles and disposable syringes should be placed into the nearest possible puncture resistant collection containers.

B. Disposable needles and syringes should not be manipulated by hand after use except to replace the cap on the needle.

C. Trash compactors are not acceptable ways to dispose of needles and other sharps after use.

D. Non-medical personnel should be directed to properly seal needle and sharps collecting containers before discarding.

YOUR CHOICE _____

8. Which of the following is true regarding the safe disposal of bacteriologic and other laboratory wastes according to the concept of universal precautions:

A. While waiting trash collection and removal, waste material should be placed in an area far removed from public access.

B. Before disposal, used specimen containers should be autoclave or incinerated regardless of the type of patient material they contained.

C. Autoclaving or incineration of all used bacteriologic culture material is required to prevent the spread of infectious agents.

D. The sanitary sewer system is an acceptable area for the disposal of blood specimens and liquid wastes.

YOUR CHOICE _____

CONGRATULATIONS !!! You have now completed the module. Compare your responses with those listed on the next page.

POST-ASSESSMENT RESPONSES

1. AIDS is a blood borne and sexually transmitted fatal disease caused by HIV which is capable of destroying the immune system allowing opportunistic disease to develops. ARC has the same signs and symptoms as AIDS but has not evolved into a life-threatening situation.

2.- - True

3.- - A. Minimizes/prevents exposure to occupationally acquired infectious diseases.

B. Prevents occupationally acquired infection of HIV.

C. Eliminates at least three traditional isolation categories, e.g. Blood and Body fluid, Enteric, and Drain/Secretion.

4.- - #3

5.- - #3

6.- - #4

7.- - #2

8.- - #5

If you wish to verify the information relative to a question, please refer to the module content or use the references listed on page 32.

GLOSSARY

Agent:	something that causes an effect such as bacteria that cause disease.
Antibody:	protein substance developed in response to an antigen such as bacteria, toxins, foreign blood cells.
Autoclave:	sterilization, completely removing or destroying all microorganisms on a substance, by steam pressure, usually at 250 F. for a specified period of time.
Bacteria:	any microorganism of the class of schizomycetes.
Bacteriologic:	pert. to bacteriology, science that deals with bacteria.
Contagious:	communicable, transmitted readily from one person to another.
Disinfectant:	a chemical that prevents infection by killing bacteria.
Epidemic:	appearance of an infectious disease or condition that attacks many people at the same time in the same geographical area.
Immune:	protected from or resistant to a disease due to the development of antibodies.
Immunosuppression:	prevention of formation of the immune response.
Infectious:	capable of being transmitted with or without contact.
Intravenous:	within or into a vein.
Mucous membrane:	membrane lining passages and cavities communicating with the air.
Pathogenic:	productive of disease.
Resuscitation:	revival after apparent death, artificial respiration, maintenance of respiratory movements by artificial means.

REFERENCES

The following materials provided content resources for this module. The primary source for the complete list of universal precautions is the Michigan State Department of Public Health.

U.S. Department of Health and Human Services. (1987). Surgeon general's report on acquired immune deficiency syndrome. Washington, D.C.: U.S. Government Printing Office.

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Windom, R.E. (April, 1988). AIDS and the health care worker. AIDS Update. Washington D.C.: U.S. Government Printing Office.

Wyckoff, R. (Ed.) (April, 1988), AIDS UPDATE: Michigan Department of Public Health. 3 (7), 1-6.